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ARTIFICIAL INTELLIGENCE, CONSUMERS, AND THE EXPERIENCE ECONOMY

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INTRODUCTION

The term Artificial Intelligence (AI) was first used by McCarthy, Minsky, Rochester, and Shannon in a proposal for a summer research project in 1955 (Solomonoff, 1985). It is widely and commonly defined to be “the science and engineering of making intelligent machines” (McCarthy, 2006). Recent technological advances and methodological developments have made AI pervasive in new marketing offerings, ranging from self-driving cars, intelligent voice assistants such as Amazon’s Alexa, to burger-making robots at restaurants and rack-moving robots inside warehouses such as Amazon’s family of robots (Kiva, Pegasus, Xanthus) and delivery drones. There is optimism, and perhaps even over-optimism, of the potential heralded by AI as a source of greater customizability and personalization and reduced operational costs.

For many businesses planning to develop and deploy AI (and more generally, machine learning algorithms underlying this technology), a promising context is marketing decisions (Davenport, Guha, Grewal, & Bressgott, 2020) in experiential products and services (McKinsey Quarterly, 2021). Experiential products and services are those that are characterized by the sensory experiences they provide to users and consumers (Holbrook & Hirschman, 1982). Common examples include entertainment (e.g., real-life concert performances, movies and shows on Netflix and Disney+), hospitality (e.g., fine-dining restaurants, hotel resorts), and tourism (e.g., amusement parks, travel packages).

Understanding what customers want in experiential products and services is a fundamental challenge for businesses catering to the “experience economy” (Pine & Gilmore, 2011). Given that the primary value of an experiential product lies in the sensory experience that it provided to consumers, experiential products tend to have complex, nuanced, and rich features (Mukherjee &

Kadiyali, 2018). There are almost limitless possibilities as businesses aim to develop new experiential products that appeals to the market. For example, Netflix has been reported to hire human coders to develop a proprietary classification system of over 76,000 micro-genres to describe its movies and television shows (Madrigal, 2014), which power both the development of its new entertainment offerings and its recommendation engine that promotes its existing offerings. Examples of such tags include “spy action and adventure movies from the 1930s,” “critically-acclaimed emotional underdog movies,” and ‘British set in Europe Sci-Fi & Fantasy from the 1960s” (Madrigal, 2014). While this process was required for product management and customer experience management, it is likely very expensive and time-consuming to setup and to maintain (to keep up with the fast-changing consumer preferences and wide range of product options in the entertainment industry). Fortunately, recent developments in the AI and machine learning literature present several exciting new possibilities to help businesses better and more effectively cater to the experience economy, though exactly how they can manifest in business operations is still largely being discussed and explored (PwC, 2017).

Crucially, the successful development and deployment of AI-based experiential products and services depends on the consumer’s willingness to accept and adopt AI technologies and solutions. Current anecdotal evidence, however, suggests that the consumer’s receptivity of AI is complex, multiply determined, and hard to anticipate. For example, during the COVID-19 pandemic, Pan Pacific Singapore expanded the functions of its AI digital concierge Mika to handle guest needs (e.g., requests for housekeeping items) (Vouch, 2020), while Henn-na Hotel in Japan drastically reduced its robot services due to escalating guest complaints (Haddad, 2020). Though both hotels deployed AI to provide better lodging experiences, the dramatic difference in AI

deployment outcomes is illustrative of the uncertainty that surrounds the acceptance and success of AI products and services in the experiential economy.

The nascent scientific (academic)s evidence corroborates the anecdotal evidence. For example, extant research has found that people place lower trust in dating services that are based on AI algorithms (Castelo, Bos, & Lehmann, 2019), callers to customer service centers end calls early and report lower satisfaction if they realize they are interacting with an AI (Luo, Tong, Fang, & Qu, 2019), and patients are unwilling to utilize health care provided by AI (Longoni, Bonezzi, & Morewedge, 2019), relative to equivalent services offered by human agents. These findings challenge the general assumption (and hope) that customers will adopt AI products and services if these products and services lower search costs and/or increase consumer utility and consumer welfare. In contrast, the anecdotal evidence and emerging empirical findings suggest that consumers may be unwilling to accept and adopt AI solutions—even when such solutions provide superior benefits at a reasonable cost—due to people’s fundamental mistrust of, and reticence towards, AI.

Accordingly, the present book chapter discusses the nascent literature on consumers and AI, particularly in the context of experiential products and the experience economy, which are key marketing application contexts (Pine & Gilmore, 2011; McKinsey Quarterly, 2021). The present chapter further draws upon the formal academic literature and leading practitioner press to synthesize current evidence, with suggestions and recommendations for marketing managers and policymakers tasked with driving the deployment and success of AI in the experience economy.

BACKGROUND

Experiential products and services are those that consumers choose, buy, and use solely to experience and enjoy (Holbrook & Hirschman, 1982). The key benefit of an experiential product is “hedonic consumption, that is the feelings, emotions and sensations experienced during product usage” (Cooper-Martin, 1992). Examples of experiential products include going to watch a movie (Mukherjee & Kadiyali, 2011), taking a vacation (Chang & Pham, 2018), and attending a concert (Table 3, Loureiro et al., 2020). As consumers place increasing emphasis on experiences over material possessions (Euromonitor International, 2017), the experience economy is growing in prominence and importance to many nations’ overall gross domestic product (Pine & Gilmore, 2011). Recognizing the increasing significance of managing consumer experiences for businesses’ long-term success, practitioners are increasingly focusing on customer experiences and experiential marketing—the marketing of a product by emphasizing its experiential benefits. For example, BMW markets its automobiles based on driving experience; the tourism boards of many countries and cities advocate the emotional benefits that visitors derive by experiencing the culture, history, and scenery of specific destinations.

Rapid improvements in AI due to the availability of new data sources and new discoveries in machine learning promise a transformational opportunity for marketing practice, with extensive and diverse applications ranging from product recommendations to digital assistants to dynamic pricing modules to customer relationship management (PwC, 2017; MIT Technology Review Insights, 2020; Mukherjee & Chang, 2022). These improvements are particularly prominent in the context of experiential products and experiential marketing, where AI has helped make the consumer journey frictionless in consumer-facing tasks. For example, Disney uses AI to enhance

consumers' visit experiences at Disneyland, Spotify uses AI to enhance listeners' overall music consumption experience, and Amazon uses AI to help make customer ordering process seamless and frictionless.

Moreover, the swift adoption and deployment of AI has been fueled by the increasing widespread accessibility and affordability of developing and deploying AI (see Chang & Mukherjee, 2022 for a discussion on machine learning methods and data sources for publicly available customer data). Concrete examples of tools to facilitate the deployment of AI that are available in today's market include Google's Cloud Platform, Amazon's Web Services, and Microsoft's Azure, among others. These cloud services allow companies to create AI solutions in a cost-effective way, substantially lowering the barrier to entry and shortening the amount of time to implement AI solutions in marketing contexts. To reduce barriers to entry in deploying AI solutions, many large technology companies have also created tools that offer a "code-free" approach to developing machine learning algorithms—the nuts and bolts of AI technologies—allowing those without coding experience to develop and employ AI. These platforms, combined with numerous large publicly available datasets, make it possible for firms to simplify the process of incorporating AI solutions in their market offerings.

This phenomenon, "making it possible for everyone to create AI systems", has been termed the democratization of AI (Riedl, 2021). As more people access the models, data, and computing resources necessary to build an AI application, the more its benefits can be shared by all users to improve work processes resulting in more innovations. Thus, analysts have speculated that AI could level the playing field for small and medium enterprises relative to large corporations, so improving AI tools for development and deployment and making them more accessible to encourage adoption should be at the top of business priorities (Forbes, 2019).

CONSUMERS AND AI IN THE MODERN EXPERIENCE ECONOMY

Despite the novelty and usefulness of an AI innovation, its success is not guaranteed in the real-world, as it requires consumers to accept and adopt the AI as part and parcel of daily living. Consider the following examples: Bank of America's (BoA) chatbot Erica that provides customer service support; Lemonade, an insurtech that utilizes AI-powered interfaces to sell and manage insurance policies; Amazon's Alexa, a digital assistant that uses speech recognition and natural language processing to streamline consumers' digital lives; and Disney's Imagineers who use AI to bring characters to life. In each case, the AI product or service is profoundly creative and innovative and brings to market product solutions that are both novel and useful (Cropley & Cropley, 2010; Mukherjee, Chang, & Chattopadhyay, 2019).

Much of the economic opportunity that AI is expected to bring to the global economy depends on consumers, with 45% (or over US\$7 trillion) of total economic gains estimated to come from consumer demand for new AI-enhanced ("smart") products and AI-enabled personalized services (PwC, 2017). In many AI applications in marketing, AI-enabled products and services interact directly with consumers on a wide range of tasks. These tasks include offering support in customer service encounters via chatbots, providing customized product recommendations in ecommerce, and helping customers place orders. For example, Netflix is using AI to better personalize movie recommendations to consumers based on prior viewing habits and on the time, location, and device used. Through conversational AI (e.g., using speech recognition, natural language processing), Amazon's digital assistant Alexa is transforming the customer purchase journey by making purchase seamless and frictionless. During the COVID-19 pandemic, many US

universities began to use virtual assistants to answer student queries (NYTimes, 2020). Several hotels in Singapore, including Andaz, Parkroyal Collection Marina Bay, and Pan Pacific, began to utilize AI-powered digital concierge solutions to deliver customer service. Not only can AI improve business productivity, it also holds the promise to augment consumer capacities and enhance consumer experiences, thereby improving overall consumer well-being.

Given these positive benefits, will consumers accept and adopt these innovations? On the one hand, the innovations promise new benefits such as coordinating daily activities (e.g., scheduling a robot to vacuum the house, automatically paying the bills), discovering engaging and interesting content, and reducing the effort and time required for chores such as driving to the grocery store. On the other hand, the products also require an acceptance of the access and control that these solutions require over personal information and personal activities that may not be unacceptable to consumers. Crucially, there is insufficient empirically based guidance as to best practices for understanding, designing, and managing consumer experiences that are delivered and augmented using AI technologies (Marketing Science Institute, 2020).

The uncertainty in consumer receptivity toward AI and, relatedly, differences in the success of AI implementations is most likely due to the myriad social, cultural, and psychological factors (e.g., consumer motivations; Pham & Chang, 2008) that influence consumer journeys and customer satisfaction. To drive the successful deployment of AI in marketing, it is therefore crucial to consider consumer psychology—how consumers perceive, feel, and respond toward AI—as germane to the acceptance and success of AI innovations in marketing (Mukherjee & Chang, 2018). Other key stakeholders—computer scientists (AI developers), businesses, and public agencies—in the marketplace appear ready for the AI revolution. However, due to the emergence of AI products and services being a new phenomenon, relatively little is known about individuals’

(consumers') receptivity of AI innovations in marketing (Mukherjee, Yang, Xiao, & Chattopadhyay, 2017).

These issues are compounded in the case of experiential products and the experience economy. Experiential products are composed of experiential product attributes—aspects of one's experience when consuming the product or service, such as the ambience in an upscale restaurant (Gilovich & Gallo, 2020)—that are inextricably linked to the personality of the human being who delivers them. For example, a visit to a wine store depends profoundly on to the personality of the salesperson who engages the customer, gauges his/her preferences, and recommends products. The salesperson engages in conceptual education—educating the consumer on “how the wine is produced generally and discussions of wine varietals in general” (Mukherjee & Chang, 2022).

Will a wine store that replaces a human salesperson with an AI salesperson be as successful? The answer to this question is not clear because on the one hand while the adoption of AI and the use of an AI salesperson may lead to a more detailed understanding of the customer's preferences, a more seamless experience, and a more expansive set of recommendations; on the other hand, the absence of the empathy and charm of a human salesperson may detract from the intimate wine purchase experience that the customer is familiar with and enjoys.

Importantly, in addition to the overall appeal of the AI salesperson, the consumer behavior and marketing literatures provide several arguments for why the AI salesperson may not be as effective as may be expected from a purely economic perspective (based on rationality).

First, it is typical for artificial intelligence to play a greater role in facilitating purchases that are made for future consumption (e.g., a chatbot on an e-retailer's website; ordering products using conversational AI). Consumers rely less on their feelings for temporally distant consumption than for temporally closer consumption (Chang & Pham, 2013). Therefore, we would expect that

the analytical viewpoint will dominate when purchasing for the future, as is natural when purchasing online using an AI agent (such as a chatbot), thereby shaping what and how much the consumers purchase—a critical factor in determining the financial implications of having an AI salesperson. Some initial empirical evidence, consistent with the view that certain domains and decision contexts promote greater reliance on affective feelings versus analytical thinking—have been found in consumers’ reaction toward product recommendations (Longoni & Cian, 2020). Longoni and Cian (2020) found that consumers show lower acceptance (and greater resistance) to AI-based recommendations when hedonic product features (those that provide rich sensory experiences such as tasting notes of wines, scent of fragrances, thrill of rollercoaster rides) are salient for consumer judgment and decision making, compared to human-based recommendations.

Second, the success of the AI agent may be determined by general facets of consumer behavior that do not relate to AI but apply to the AI solution. For example, prior research has found that “consumers’ increased self-focused attention promotes their relative reliance on affective feelings when they make decisions” (Chang & Hung, 2018). It would follow that if the AI sales agent was manifested in contexts promoting self-focused attention—such as personalized recommendations, AI agents addressing customers by their first names (“Hello Adriana, what can I help you with today?”) or even AI agents with reflective surfaces in their physical designs—we would anticipate that the consumer would behave differently than if the same agent in the same context and environment was manifested in a device with a matte (unreflective) finish.

Third, firms’ knowledge of consumers’ experiential product preferences is limited due to the limitations of extant marketing research methods (Mukherjee & Chang, 2022), which limits the accuracy of the data that is available to train the machine learning algorithms underlying the AI, and thus likely limits the efficacy of AI-driven sales algorithms and models.

As these examples and arguments demonstrate, the success of AI in the experiential economy is thus difficult, and perhaps even impossible, to understand and predict. This is at least in part due to the extant knowledge base on consumer receptivity and AI—relatively little is known about the consumer psychology of AI consumer-AI interactions are still a recent and new phenomenon (e.g., voice-enabled assistants, digital content curators). It is not clear whether insights from prior scientific studies can be extended to this context, given that AI-enabled products often vastly differ from prior products, in scale, performance, and dynamics. Moreover, extant empirical findings have documented substantial differences in consumer behavior across countries and cultural backgrounds, in aspects that might have downstream consequences for consumers’ receptiveness toward AI solutions. For example, consumers across markets and cultures show profound difference in how they respond to social environment (e.g., toward service providers; Shavitt & Cho, 2016; Hong & Chang, 2015), their risk attitudes toward technological innovation (Weber & Morris, 2010), and various aspects of their consumption behavior (e.g., brand perceptions, product attitudes) in marketing contexts (Shavitt, Lee, & Torelli, 2009). These findings on cultural differences in consumer behavior underscore the complexity in predicting consumers’ reaction toward various AI solutions. Finally, emerging academic papers in this nascent area typically explore the psychology of automation (e.g., people’s reaction toward human job replacement by robots; Granulo et al., 2019) or the use of computer algorithms (e.g., people’s trust in tasks performed by an algorithm; Castelo et al., 2019). While automation and computer algorithms are two important features of AI, there is much more to AI, and more richness and nuances in consumers’ interactions with AI solutions that are yet to be addressed.

While AI has recently been implemented to help companies in various consumer-facing tasks—improved recommendation engines, digital content curations (e.g., news, music, and

movies)—most companies still rely on traditional (survey-based) measurement and data analyses methods to measure the efficacy of their marketing practices and customer experiences (McKinsey Quarterly, 2021). Collectively, these factors describe nontrivial challenges faced by today's businesses when they consider AI and consumers in the experience economy—(1) in consumer-facing tasks, there are substantial uncertainties in consumers' overall receptivity and adoption of AI technologies offered by businesses and at the same time, (2) there is lack of empirical framework and data for a precise measurement of consumer experiences with AI technologies. These create challenges for managers and business practitioners to navigate in today's competitive marketplace for effective managerial decision making.

SOLUTIONS AND RECOMMENDATIONS

The current state of knowledge lacks a keen and detailed understanding of the consumer's decision journey as shaped and determined by the consumer's interactions with AI and manifested in the consumers' purchases (Hermann, 2021; Puntoni, Reczek, Giesler, & Botti, 2021). Suggestions for best practices to manage challenges in AI deployment, as well as recommendations to develop and deploy successful AI products, would provide helpful inputs for businesses in the modern experience economy. Below, solutions and recommendations are presented for businesses keen to kickstart the process for creating successful AI products and deploying them in the experience economy.

As a starting point, manager and practitioners should grasp the range of possible AI solutions and the scope and objectives of their applicability. The umbrella term of "Artificial Intelligence" entails a large set of possibilities. Therefore, understanding what each solution is

designed for, what it can and cannot do, and how it has been deployed in the market by other businesses can help practitioners think of ways to apply the technology and integrate it into operations. Being cognizant of the strengths and weaknesses of each technology and how different AI are designed to solve different problems is crucial for deployment. For example, a class of machine learning (ML) techniques known as computer vision is good at classifying visual objects and making predictions given sufficient and diverse past information (Chang, Mukherjee, & Chattopadhyay, 2022). Another class of ML techniques used in computational linguistics, natural language processing, has been applied in a wide variety of areas across AI deployments involving texts-based information (Mukherjee, Xiao, Wang, & Contractor, 2018); they include recommendation engines, chatbots, fraud detection, article writing, and even music creation (Marr, 2019). They are possible marketing use-cases for AI in the experience economy.

Once managers and practitioners have a specific aim in mind, they should consider the data that would be required to train the AI solution (PwC, 2017). AI models require vast amounts of data in model training. Knowing about the data requirement in advance can in turn help managers better plan, collate, and collect relevant data about their customers. Ensuring proper data practices can provide useful insights, through traditional techniques, which sets up a solid basis for AI deployments for the company going forward. On top of the company's internal data, managers can consider accessing publicly available data (see Chang & Mukherjee, 2022 for examples of customer-relevant data) or off-the-shelf, pretrained AI models to expedite the preparation work for eventual AI deployment (Riedl, 2021). There are many such options that are user-friendly, cost effective, and accessible in the market; it may be worthwhile to consider open-sourced AI solutions and other vendor platforms that provide AI-as-a-Service. Well known platforms and service providers include Google, Microsoft, and Amazon, IBM Watson, and SAS (see Chang, Mukherjee,

& Chattopadhyay, 2021 for such application in the context of crowdfunding). These options have given small-and-medium-sized enterprises greater access to AI technology (more specifically, the algorithms) without a large initial investment in monetary and manpower resources. These create an accessible starting point to build an AI application for initial testing and deployment; in the process, the additional data generated can also help build a contextual, representative dataset for the company. AI needs customization for businesses to unleash its intended benefits (c.f. Borges, Laurindo, Spínola, Gonçalves, & Mattos, 2020). Therefore, datasets designed to purpose (i.e., data specifically collected for the marketing application at hand for the company in question) can help continually improve the effectiveness of AI as a solution going forward.

When thinking of which AI solutions to deploy, managers and practitioners are sometimes overly optimistic and overambitious. Most successful AI deployments are simple solutions that are easy to implement, bring measurable benefits, and are concrete in the objectives they aim to achieve. Most small and medium sized businesses, such as are common in experiential industries (e.g., restaurants, tourist attractions), cannot afford to go for complicated projects that require large amounts of capital and trained manpower (Columbus, 2017). Instead, it is preferable to start with more modest and achievable goals, which can help the organization feel more comfortable and confident in its AI deployment, familiarize its employees with AI technologies, and can encourage stakeholders to invest more into AI in the future. By running AI pilots to perform specific tasks sequentially; as the ROI of the AI applications manifest, it would likely be easier to get greater buy-in from relevant stakeholders and build a road map for successful AI deployment (Groom, 2019).

FUTURE RESEARCH DIRECTIONS AND CONCLUSION

As AI products and services are a new phenomenon, there is a wealth of possible research directions and ideas, as described by recent calls by business practitioners (e.g., PwC, 2017; Thomas, 2020) and marketing scholars in consumer experiences (e.g., Ameen et al., 2021; Puntoni et al., 2021), service interactions (e.g., Hermann, 2021; Huang & Rust, 2021a), and general marketing practices (e.g., Huang & Rust, 2021b). Many nations around the world have made AI development an integral part of their national policies going forward. For example, the United States—a leader in AI technology and applications in marketing, with the most AI patent filings globally (PwC, 2017)—describe its AI policy outlook in a document published by Select Committee on Artificial Intelligence, White House, USA. China—with tremendous growth in AI systems and another leader in number of AI patent filings globally (PwC, 2017)—has outlined its plan for AI growth in its Next Generation AI Development Plan, as part of the China Institute for Science and Technology Policy. Similarly, Singapore has demonstrated strong government support (with various support schemes and initiatives) in advancing AI technology for deployment by large companies and small-and-medium-sized enterprises, as evident in Singapore’s the Smart Nation Initiative and National AI Strategy.

Given the ongoing development in AI and the opportunities afforded by this technology, it is imperative for managers, policymakers, and enthusiasts alike to examine the consumer psychology of AI—how consumers perceive, feel, and respond toward AI—which is likely to be germane to the success for AI deployments in the experience economy. Computer scientists have made great stride in the development of algorithm-driven AI systems and machine learning methods. Businesses have begun or are planning to incorporate AI systems in their business and

operating models (Thomas, 2020). Public agencies around the world are encouraging digital transformation and inclusiveness. However, less is known about individuals' (consumers') receptivity toward AI-enabled systems in marketing contexts. Therefore, to harness the economic potential that AI brings to the marketplace, research is needed to fathom the psychology of consumer-AI interaction.

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KEY TERMS AND DEFINITIONS

Artificial Intelligence: Artificial intelligence is the science and engineering of making intelligent machines and the emulation of human intelligence by machines. Examples of artificial intelligence include natural language processing, speech recognition, and computer vision.

Chatbots: A computer program and statistical model that is designed to simulate conversation with human users.

Experience Economy: Experiential marketing, and the experience economy, is the marketing of a product by emphasizing its experiential benefits. Examples including engaging a firm to provide a birthday party, hiring a Konmari consultant for a Marie Kondo makeover, and visiting the Maldives to celebrate a wedding anniversary.

Experiential products and services: Products and services that consumers choose, buy, and use solely to experience and enjoy.

Machine Learning: Machine learning is the development and use of computer algorithms that automatically through experience and by training on data.

Voice-based assistants: A voice-based assistant is a software agent that can perform tasks or services for an individual based on voice commands and/or questions.